Pilot Testing the Shift from In-Person to Phone Data Collection on the Medicare Current Beneficiary Survey (MCBS)

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Abstract
The Medicare Current Beneficiary Survey (MCBS) is a longitudinal survey of a nationally representative sample of the Medicare population, conducted by the Centers for Medicare & Medicaid Services (CMS) through a contract with NORC at the University of Chicago (NORC). The MCBS collects detailed data from Medicare beneficiaries and proxies living in the community and from facility staff on behalf of beneficiaries living in long-term care facilities. Topics collected include health care use and expenditures, health status, and other factors that affect health care utilization.

Due to the COVID-19 pandemic, public health officials issued guidance limiting in-person interactions, first in long-term care facilities in early March 2020 and then for people living in community settings in mid-March. In response, CMS and NORC paused in-person data collection, the MCBS' primary data collection mode for community and facility interviews, to ensure the health and safety of respondents and interviewers. To continue collecting data while adhering to in-person visit restrictions, NORC conducted fast-track pilot testing to study the shift to telephone-only data collection.

The purpose of this paper is to summarize the planning and implementation efforts needed to transition to telephone interviewing, which occurred on a compressed timeline. This was particularly challenging given that the MCBS is a continuous, large scale interviewing operation which interviews roughly 16,000 Medicare beneficiaries during three rounds of data collection annually over a four-year period. We will discuss the pilot testing framework, which assessed the feasibility of conducting Community and Facility interviews by telephone. Additionally, we will discuss the operational results of the pilot testing, including preliminary data collection metrics and interviewer feedback about the more challenging aspects of telephone data collection such as ensuring availability of beneficiary medical records. Finally, we will review how the pilot testing continued to inform telephone interviewing throughout the remainder of 2020 and into 2021.

Key Words: Medicare Current Beneficiary Survey, Phone Pilot Test, COVID-19, Data Collection, Interviewer

1. Introduction

With the emergence of the COVID-19 pandemic in the U.S., the Centers for Medicare and Medicaid Services (CMS) and NORC at the University of Chicago (NORC) implemented a series of operational changes to the Medicare Current Beneficiary Survey (MCBS) to ensure the health and safety of both respondents and field interviewers. In March 2020,

CMS and NORC paused in-person data collection in both facility and community settings (March 14th and March 22nd, respectively). To maintain respondent and interviewer engagement after the start of the pandemic and continue with data collection while adhering to restrictions on in-person visits, NORC piloted telephone data collection within days of stopping in-person data collection. The pilot test was conducted in both the Community and Facility components with production cases; that is, the test did not select a new sample but rather continued MCBS interviewing by phone instead of in-person with respondents who were scheduled for interviews. The successful results led to the implementation of phone-only data collection for the full MCBS sample in 2020 and into 2021.

The purpose of this paper is to summarize the planning and implementation efforts used to transition to phone interviewing within a compressed timeline. This was particularly challenging given that, while limited phone interviewing had always been permitted on the MCBS, the survey in general had been conducted in-person for nearly 30 years and no research had been conducted on the impact of conducting all interviews by phone.

2. Background

The MCBS was launched in 1991 and is a continuously fielded survey of a nationally representative sample of the Medicare population sponsored by CMS through a contract with NORC. The Medicare population includes all persons aged 65 and over, persons with certain disabilities, and persons with end-stage renal disease (ESRD). For both the Community and Facility components of the MCBS, data are collected for the same beneficiary continuously up to three times a year over a four-year period for a total of 11 interviews. Every fall, new respondents are recruited into the survey and have their first interview. Subsequent interviews are conducted at four-month intervals. Each year there are three rounds of interviews identified seasonally – a Fall Round, a Winter Round, and a Summer Round.

The sample design uses a rotating panel, where one-quarter of the sample is retired each year in the Winter Round and a new sample is selected in the Fall Round. The MCBS Data Collection Life Cycle for the respondents who participated in the pilot test is shown in Figure 1.

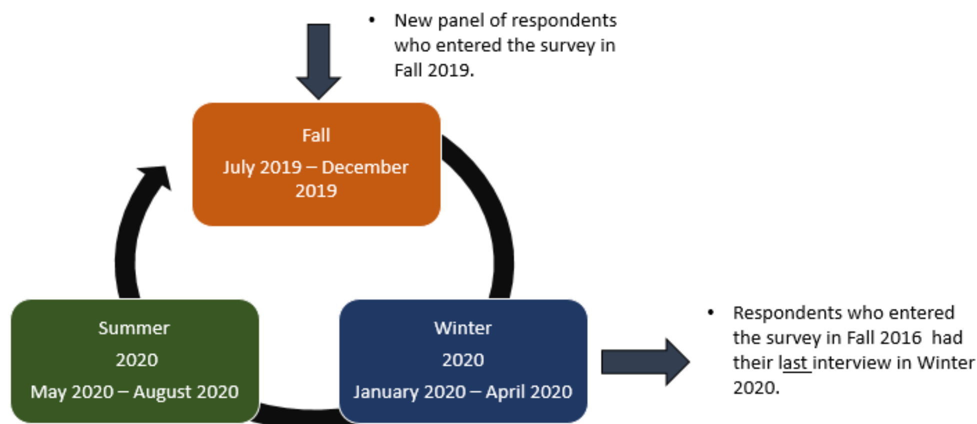

Figure 1: MCBS Data Collection Life Cycle for Fall 2019 – Summer 2020

Although phone interviewing has been permitted for certain cases since the origin of the survey, the primary mode of data collection has been in-person. The main reason for this is to facilitate the proper collection and abstraction of complex cost and utilization data from printed health care documentation. The survey covers topics including health care utilization and expenditures, sources of health insurance coverage, and health status and functioning, among others. Data are collected for sampled beneficiaries living in both noninstitutionalized (e.g., households, henceforth referred to as "Community") and institutionalized (e.g., nursing homes, henceforth referred to as "Facility") settings. Different data collection protocols and instruments are used for Community and Facility interviews. While both instruments cover approximately the same topics, the MCBS Community interviews are conducted with the sampled beneficiary or a designated proxy respondent, whereas Facility interviews are conducted only with facility staff rather than the sampled beneficiary.

As the MCBS is a continuous, longitudinal study, the emergence of the COVID-19 pandemic meant that it was vital to maintain respondent and interviewer engagement and continue data collection. This was particularly important as the Medicare population is at increased risk for contracting COVID-19 and it leading to severe illness[1], and monitoring health outcomes for this population needed to be evaluated. Absent precedent for conducting all MCBS interviews by phone, a strategy was developed to continue data collection by conducting a small pilot test in both the Community and Facility components to explore the feasibility of large-scale telephone interviewing.

Due to the rapid nature of the pandemic, NORC incrementally shifted production to phone, using a phased approach that allowed for data collection as well as the gathering of qualitative feedback on the operational aspects of phone interviewing. This, in turn, allowed NORC to quickly inform protocols for wider scale phone interviewing. Two main operational areas were evaluated:

1. Ability to gain and maintain respondent cooperation with the respondent to complete the interview by phone, and
2. Ability to complete all survey sections with all case types by phone.

The remainder of this paper will first review the phone pilot test implementation and results in the Facility component as this occurred first due to early restrictions on non-essential visitors entering facilities. Those sections will then be followed by review of the phone pilot test implementation and results in the Community component.

3. Facility Phone Pilot Test

3.1 Overview

Long-term care and other MCBS-eligible facilities felt the earliest impact of the COVID-19 pandemic, with CMS issuing guidance on March 13, 2020, based on CDC recommendations, to restrict non-essential visitors to all facilities. As a result, CMS and NORC paused MCBS data collection and developed plans to test the feasibility of completing the Facility interview by phone. The Facility phone pilot test started on March 16, 2020, and ran through March 24, 2020, as seen in Figure 2.

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[1] Centers of Disease Control and Prevention. "People at Increased Risk for COVID-19". Updated Nov. 30, 2020. Available from: https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/index.html

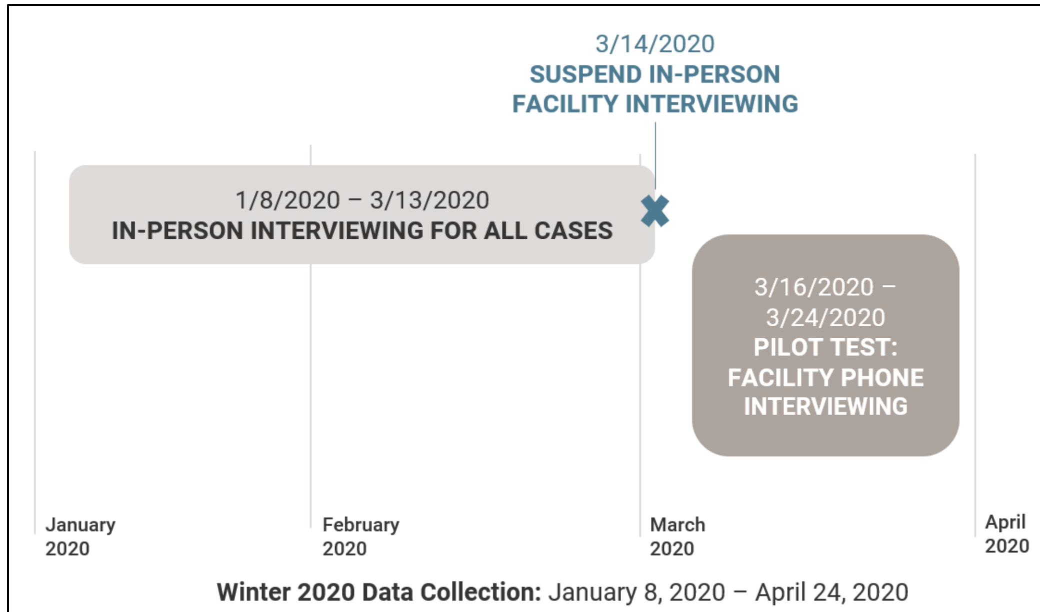

Figure 2: Timeline of Facility Phone Pilot Test

3.2 Pilot Test

The Facility pilot test was small in scale, in part because the nature of the interview was expected to be more conducive to phone administration than the Community interview. The Community interview obtains relevant health care utilization and cost information from disparate health insurance billing statements, whereas the Facility interview relies on information that is more centrally available in medical records and billing documents. While different sections of the interview are completed with different facility staff who are knowledgeable about the beneficiary and their records, the programmed computer assisted personal interviewing (CAPI) instrument offers a flexible, modular approach for administering the interview even when certain staff are not available. For example, after the first two sections of the Facility interview are complete, the interviewer can navigate to the most convenient section based on the facility staff available at the time of the interview.

Additionally, the Facility interview was thought to be more conducive to administer via phone for Medicare and/or Medicaid certified facilities as these facilities require less abstraction from medical and administrative records for certain sections of the Facility interview. In lieu of administering items about the beneficiary's health status to a facility staff person, for example, the Facility interview skips over these items for Medicare and/or Medicaid certified facilities. NORC incorporates these data into files during post processing by linking to CMS administrative data sources.[2]

To test the feasibility of completing the Facility interview by phone using the CAPI instrument, three experienced interviewers conducted 12 interviews, spanning a variety of facility types, such as nursing homes or assisted living facilities. This pilot test also included six facilities certified by Medicare and/or Medicaid and six that were not. This

[2] Mayfield, A., Carnahan, R., & LeClere, F. (2019). Integrating Administrative Data with Survey-Collected Data to Reduce Burden in Establishment Data Collection. In *JSM Proceedings*, Survey Research Methods Section. Alexandra, VA: American Statistical Association. 781 – 794. Retrieved from: http://www.asasrms.org/Proceedings/y2019/files/1199493.pdf

would allow the team to assess whether a phone interview could be conducted in either type of facility.

3.2.1 Interviewer Guidance and Feedback

At the beginning of the pilot testing period, the three interviewers were provided with written guidance about how to set up the interview, gain cooperation, and navigate phone administration. Strategies for conducting the CAPI interview by phone included how to adapt standard in-person techniques, such as medical chart abstraction and handle the use of show cards[3].

Qualitative feedback was collected from the interviewers during the pilot test. Interviewers completed an evaluation form after each interview, rating each survey section from "very easy" to "very difficult." The form also asked for input on how to improve Facility phone interviewing guidance.

3.3 Results

The results of the first 12 interviews indicated that conducting the Facility interview by phone was feasible across the two areas of assessment. For the first area, which measured gaining and maintaining cooperation with facility staff, interviewers reported no issues in successfully gaining cooperation with facility staff to complete the Facility interview. They noted that it helped to provide as much background information as possible to facility staff when scheduling the Facility interview, including the interview reference periods and the administrative and medical records that would be needed. For the second area of assessment, which measured challenges in administering specific survey sections, results from the observation forms suggested that all sections of the interview were able to be effectively collected via phone, as interviewers ranked every section as "easy" or "very easy" to administer. In a few instances, interviewers ranked the collection of health care utilization as "moderate" and "difficult"; for these cases, either the appropriate facility staff person was not available, or the facility staff had to contact someone else to find the information. Interviewers also noted the importance of being familiar with medical records so that they could assist facility staff in navigating to the appropriate records for a particular interview section or question.

Overall, interviewers demonstrated they were able to successfully navigate through the Facility interview by phone, despite the few cases where the appropriate facility staff person was unavailable or there was difficulty finding the needed facility staff person due to locating limitations by phone. In their feedback, interviewers stressed the need to be flexible in accommodating the time-constraints at facilities, such as offering to call back at a more convenient time for facility staff or waiting on hold if switching between facility staff for interview sections.

3.3.1 Medicare- and/or Medicaid-certified Facilities

While evaluating the two main areas of assessment for feasibility of conducting the Facility interview by phone, it was important to consider whether interviewer feedback varied depending on the facility's Medicare- and/or Medicaid-certification status. Of the 12 Facility pilot test cases, six were Medicare- or Medicaid-certified. Regardless of

[3] Show cards are used at interview questions with several unique response options. While interviewing in-person, interviewers show this card to the respondent and the respondent would tell the interviewer which option to select. For phone interviewing the interviewers were instructed to read each response option aloud and repeat as needed.

certification status, interviewers reported that it was feasible to gain cooperation with facility staff and that facility staff were able to provide appropriate responses for all interview sections. Interviewers also reported similar levels of difficulty by section regardless of certifications status.

3.3.2 Continued Facility Phone Data Collection
Based on the results of this rapid and small Facility pilot test, NORC and CMS determined it was feasible to continue phone data collection in the Facility component on a wider scale. Facility data collection fully resumed by phone within two weeks of pausing in-person interviewing, as seen in Figure 3.

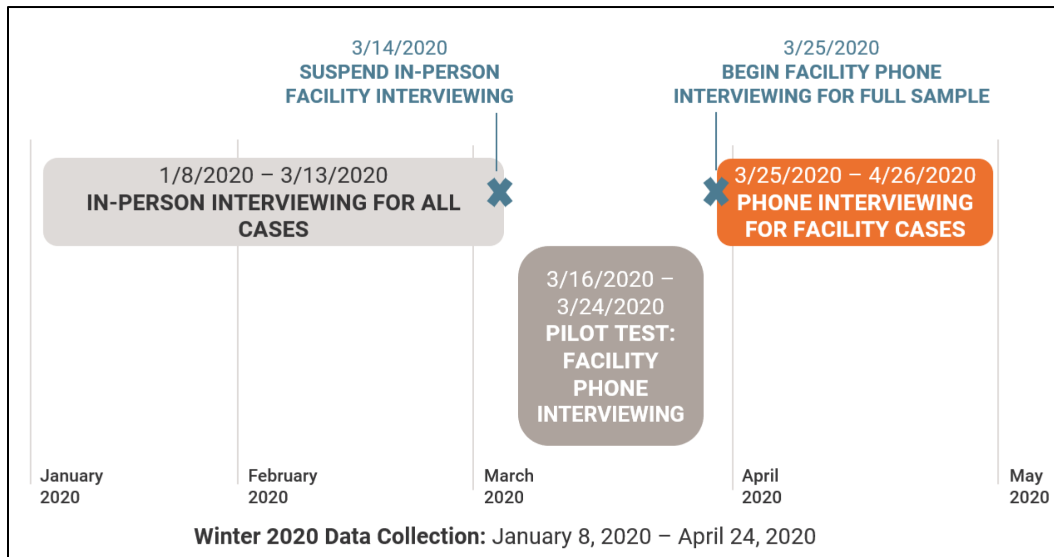

Figure 3: Facility Phone Interviewing Pilot Test Final Timeline

With the move to wide-scale phone interviewing on the Facility component, all interviewers were provided formal phone interviewing guidance, which was developed based on interviewer feedback on the interview guidance materials received during the pilot test. While interviewers were able to successfully conduct Facility data collection by phone during the pilot test, the COVID-19 pandemic impacted facility staff availability and access to medical and billing records referenced during the interview. Once wider scale Facility phone interviewing began, interviewers reported that facilities were understaffed, making it difficult to locate the appropriate facility staff person who could respond to the interview. Even when a facility staff person was identified, some did not have the time to participate in the survey. There were also issues completing the cost section for some interviews, as some facility business offices had transitioned their staff to remote work with limited access to billing records. By April 2020, NORC Field Managers reported that these offices began to reopen, and facility staff regained more regular access to billing information. Larger facilities seemed able to make this transition earlier. In mid-April, there were still some smaller facilities unable to access billing information under remote working arrangements. By the end of the Winter round data collection at the end of April 2020, fewer than one percent of Facility cases completed by phone were ultimately unable to complete the cost section, indicating that overall, facility staff members were adapting to new working arrangements introduced by the pandemic and finding ways to participate in the MCBS.

During Winter round data collection, which ran from January 8 to April 26, 2020, nearly 1,000 Facility interviews were conducted, with roughly 60 percent conducted in-person and 40 percent by phone. NORC tracked interview timings and found they were only slightly longer for the phone interviews when compared to in-person interviews.

4. Community Phone Pilot Test

4.1 Overview

CMS and NORC paused MCBS data collection effective March 22, 2020, in the Community component. Immediately after this pause, CMS and NORC developed plans and began testing the feasibility of completing Community interviews by phone. The Community phone pilot test started on March 24 and went through April 10, as seen in Figure 4.

While the MCBS covers a wide range of topics including beneficiary health status, health related behaviors, health outcomes, access to care, and satisfaction with care, one primary goal of the MCBS is to produce annual estimates of the number of health care services used by Medicare beneficiaries, how much these services cost, and how the costs are paid outside Medicare. Medicare records show how much the program pays for covered care, but they do not show payments for services that are not covered, such as select dental, vision and hearing care provider visits and purchases. Medicare records also do not include demographic information, information on beneficiaries' overall health, or how well the beneficiary can function in everyday activities. The MCBS fills these gaps and allows the government to make national estimates that represent the entire Medicare population.

While these topics are among the most important collected in the MCBS, they are also complex and burdensome to collect during a phone interview. To accurately capture beneficiary health care utilization and the associated costs, interviewers receive extensive training in reviewing and abstracting information from various health care documentation. Interviewers must identify the type of documents the beneficiary may have, organize the health care documents by event date, and abstract appropriate information to be entered in the questionnaire. By matching the beneficiary's health care utilization events with documentation they have, interviewers are able to capture a comprehensive picture of the types of medical services the beneficiary had along with the corresponding costs of these services. These very detailed and mastered skills are ideal for an in-person interview. Therefore, NORC needed to assess if interviewers could leverage these skills to assist respondent's navigation of the beneficiary's health care documentation and abstract the appropriate information over the phone and evaluate the respondent burden to locate and report specific cost details.

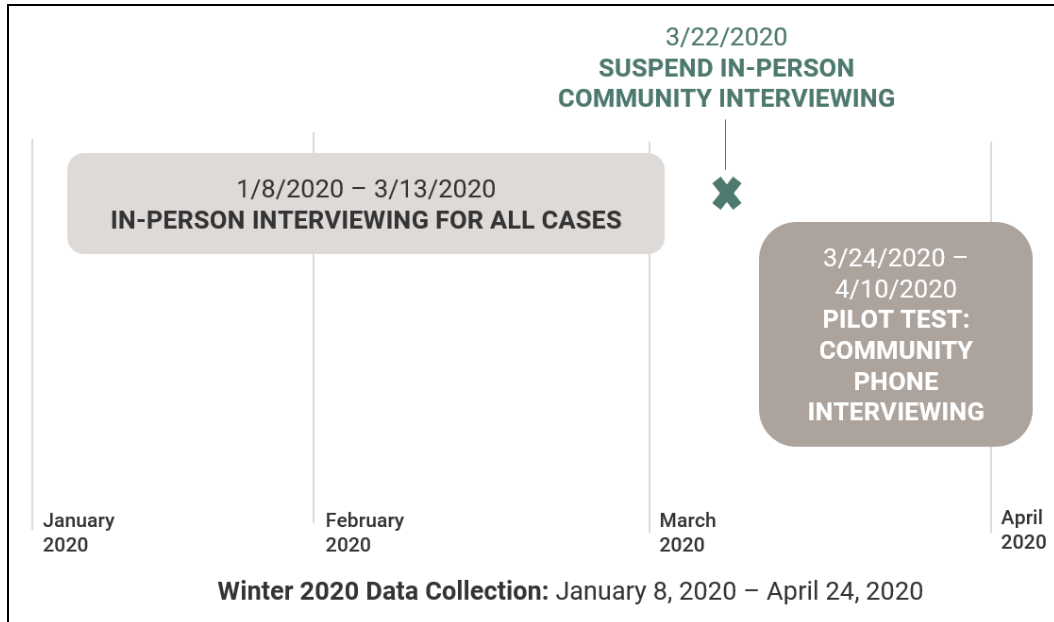

Figure 4: Timeline of Community Phone Pilot Testing

4.2 Phased Approach

The Community component included three short phases. This approach allowed for gathering of qualitative feedback on the operational aspects of phone interviewing and quickly informed protocols for wider scale phone interviewing. Furthermore, the phased approach enabled the team to rapidly refine phone strategies, building on the lessons learned from the previous phase and allowing for increased scope of interviewing. Because large scale phone interviewing had never been attempted for Community interviews, the goal was to make incremental determinations as to whether it was reasonable to continue the MCBS by phone.

4.2.1 Phase 1

Between March 24 and March 30, 2020, four experienced interviewers conducted 13 interviews. The interviewers selected for the first phase of the pilot were highly competent in collecting cost and utilization data. The intent was that their experience and knowledge would assist in protocol recommendation for conducting interviews over the phone. Respondents selected to participate in Phase 1 were considered cooperative and had already participated in at least three interviews.

Each interviewer was paired with a questionnaire expert from NORC's MCBS Research Team who listened to the interview and observed interviewer navigation through the survey via screen-share technology. Interviewers and observers completed an evaluation form after each interview to rate the level of difficulty in administering each survey section and recorded tips on administering the interview by phone. In addition, results from debriefing sessions with interviewers and observers found that respondents were willing to participate by phone and interviewers were able to successfully complete all 13 interviews.

4.2.2 Phase 2

NORC expanded the pilot test in Phase 2 to 24 interviewers who completed approximately 50 interviews from March 30 through April 6, 2020.

The goals of the second phase of the pilot test were to:

1. Attempt to conduct interviews across all panels (beneficiaries that joined the survey from 2016 to 2019) and with cases of varying expected interview difficulty, and
2. Expand the cohort of phone interviewers to include a variety of experience levels to assess the feasibility of phone interviews on a larger scale.

During this phase, Field Managers and interviewers prioritized the selection of cases not yet completing their second MCBS interview (i.e., the panel of cases recruited in the Fall of 2019). Whereas Phase 1 of the pilot was conducted with highly experienced interviewers who selected cooperative cases, less experienced interviewers were included in Phase 2 and the selection of cases was varied based on the anticipated difficulty of the interview (e.g., respondents with previously reported high levels of health care utilization or for whom additional effort was required to gain cooperation during past interviews were included). For this phase, interviewers received an interviewer job aid document based on feedback from Phase 1 that highlighted best practices for conducting phone interviews and that included tips for helping respondents to report utilization of events and cost information over the phone.

During Phase 2, the Research Team listened to and observed via screen share for some, but not all, interviews. Observers and interviewers completed an evaluation form rating the difficulty level of administering each survey section and recorded tips on how to overcome challenges. A debrief was conducted with the lead Field Manager at the close of Phase 2 to discuss overall feedback from the interviewers. Similar to Phase 1, results demonstrated that respondents were willing to participate and provide sufficient data by phone and interviewers were able to complete the interviews.

4.2.3 Phase 3

With the successful completion of the second phase of the pilot, the test was expanded to a new wave of interviewers in Phase 3. In this phase, interviewers conducted phone interviews from April 6 to April 10, 2020. In Phase 3:

- Interviewers who conducted phone interviews during Phases 1 and 2 continued phone interviewing with their remaining pending sample.
- Newly added interviewers began with a limited number of cases to allow time for onboarding and mentoring.

During this phase, the goal was to continue progress towards Winter 2020 data collection targets and provided more interviewers with phone data collection experience. Results continued to demonstrate that respondents were willing to participate and provide sufficient data by phone and interviewers were able to complete the interviews. This led to Field Managers continuing to onboard new cohorts of interviewers to complete phone interviews for the remainder of Winter 2020. Monitoring all data collection activity resulted in finalizing guidance in anticipation of wide-scale implementation of phone interviewing for the Summer data collection round.

4.3 Results

4.3.1 Gaining Cooperation via Telephone

One of the key goals of the phone pilot test was to assess the willingness of respondents to participate in what is normally a face-to-face interview by phone and to develop protocols to collect high quality data while minimizing burden on respondents and

interviewers. In the early phases of the pilot, nearly all respondents agreed to be interviewed by phone. While respondents are prepared for, and many even look forward to, in-person interactions, they understood the circumstances of the pandemic, appreciated the interviewers' concern for their health and safety, and wanted to remain engaged in the survey.

Although respondents were willing to be interviewed by phone, interviewers found that in some circumstances, gaining and maintaining cooperation was more difficult and required different techniques than for in-person interviews. Given interviewers would not be able to see the respondents' visual cues, interviewers needed to be more attentive to audible queues over the phone to ensure a successful interview. Interviewers identified several successful gaining cooperation strategies, such as:

- Monitoring respondents' tone over the phone to anticipate respondent fatigue or frustration.
- Being patient and providing more encouragement at each step of the interview to maintain respondent engagement.
- Taking breaks during the interview or working with respondents to conduct the interview across multiple shorter phone sessions.
- Staying positive and showing empathy in situations where respondents expressed frustration.

4.3.2 Phone Administration Difficulty Level by Community Interview Section

As expected, certain sections of the Community interview proved easier to administer by phone than other sections, with the cost sections being the most challenging to administer.

Not surprisingly, many of the survey sections were no more difficult to administer by phone than in-person. Sections that capture data on a variety of key topics that relate to the beneficiary's housing characteristics, health behaviors, knowledge about Medicare, and health-related decision making presented few problems by phone. Interviewers recommended updated guidance on the use of showcards in these sections, as many items in the survey rely on respondents reading the response options printed on the showcards rather than just listening to them. To address this, interviewers received guidance on where to read response options out loud. Additional recommendations included posting showcards on the respondent MCBS website. Interviewers were able to recommend that respondents who were willing and had computers visit the MCBS website to view these showcards during the phone interview.

As anticipated, the collection of health care cost and utilization presented more challenges. These sections required interviewers to "coach" respondents in locating the necessary information on insurance statements and other documentation, a task usually done by the interviewer in person. Several best practices and existing resources proved useful in navigating the utilization sections by phone. For example, interviewers had access in their case management system to a built-in survey summary sheet that helps remind the respondent of medications, provider names, and provider visits, and asking respondents to spell out prescribed medicine names. While this feature was designed to help the interviewer during in-person data collection, it was very useful on the phone as well.

In addition, interviewers were trained to expect respondent frustration and fatigue during a phone interview. If it seemed that attempting to collect full cost sections data might result in breakoffs or declining cooperation in future interviews, interviewers were provided tools and techniques to use during the interview. For example, a set of instructions for manually skipping the rest of the cost sections was developed. This protocol was to be used only in situations in which the data for sections placed after the cost sections might be at risk by an incomplete interview should a respondent become too frustrated during the cost sections.

NORC also implemented protocols that considered different characteristics of the respondents, such as when they entered the survey, familiarity with the survey questions and past participation, as well as if respondent had higher event utilization and cost to report. This ensured comprehensive information was collected for the full sample.

4.3.3 Continued Community Phone Data Collection
Based on the results of the Community pilot test, and within just weeks of pausing all in-person community interviewing, NORC and CMS determined it was feasible to continue phone data collection in the Community component on a wider scale. Community phone data collection was approved to work the remaining pending sample by all field interviewers.

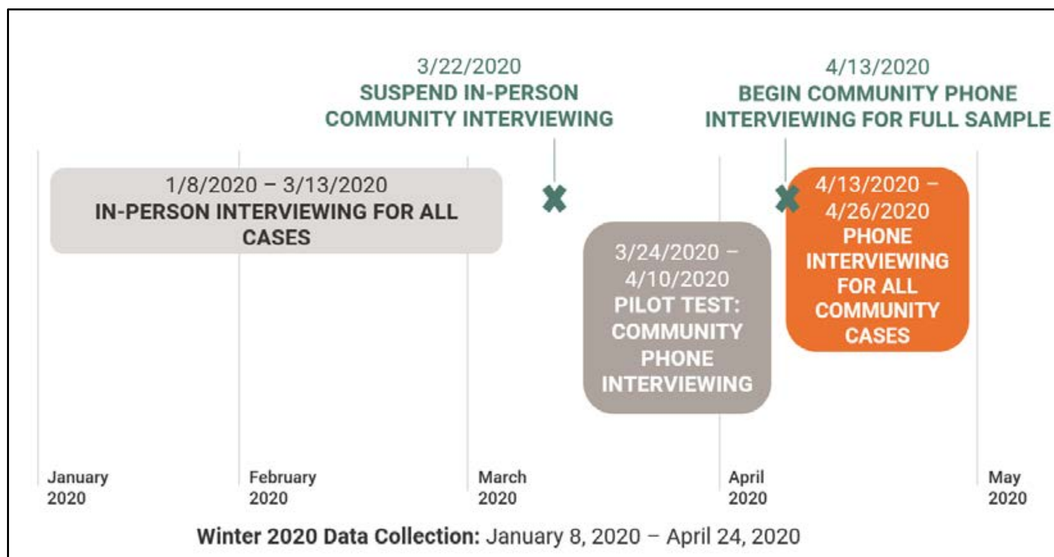

Figure 5: Community Phone Interviewing Pilot Test Final Timeline

During Winter round data collection which ran from January 8, 2020 to April 26, 2020, over 11,000 Community interviews were conducted, with roughly 80 percent conducted in-person and 20 percent by phone. Interview timings were slightly longer for the phone interviews when compared to in-person interviews.

5. Discussion and Summary

Pilot testing of telephone operations conducted in March through April 2020 allowed the MCBS to continue Winter 2020 data collection, provide all active interviewers with additional phone data collection experience, and develop more formal guidance in anticipation of continued phone interviewing in Summer 2020 and beyond. Given the

early success with phone interviewing in Winter 2020 and the continued public health emergency, NORC and CMS agreed to continue data collection by phone in 2020. Due to the ongoing challenges of the COVID-19 pandemic, MCBS data collection has continued exclusively by phone into 2021 with hopes to return to some in-person interviewing in 2022.

While the phone pilot test allowed the MCBS to continue and not suffer attrition of a longitudinal panel, CMS and NORC have embarked on a careful and thorough research endeavor looking at the operational impact and data quality issues of the interview mode. Analysis is underway to understand the impact of phone only interviewing and to inform the optimal blend of modes in the future. A forthcoming 2021 American Statistical Association proceedings paper, "Changing Modes on the Fly: Transitioning a Complex Longitudinal Survey from In-Person to Phone due to COVID-19"[4], aims to measure and understand the impact of the mode transition on the quality of the data collected across the MCBS by focusing on changes in reporting of health care events and their associated costs.

CMS and NORC continue to closely monitor administration of the survey. NORC has regularly received feedback from interviewers on strategies that have worked well in conducting phone interviews and updated protocols each round of data collection, as well as has worked to adapt and reinforce protocols surrounding data collection in rare cases of extreme frustration and fatigue. The successful phone pilot test allowed for well-informed and continued phone data collection later in the year, which may also have implications for other surveys collecting highly detailed information about health care costs and utilization, as those surveys could use similar methods to test phone data collection.

Acknowledgements

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[4] Reimer, B., K. Carpenter, A. Bisognano, and L. Kantor. (2021). "Changing Modes on the Fly: Transitioning a Complex Longitudinal Survey from In-Person to Phone due to COVID-19." In *JSM Proceedings*, Survey Research Methods Section. Alexandria, VA: American Statistical Association, *forthcoming*.